

Subject:

(یازدهم دختـر B)

Year:

Month:

Date:

()

Name:

(حورا ابدی بن زاده)

سوال 1

$$الف) y = \frac{x+3}{2x^2+3x^2-11x+3} \rightarrow \frac{x+3}{(x-1)(2x^2-9x-3)}$$

$$[x=1] \leftarrow$$

$$\Delta = b^2 - 4ac = 81 - 4(2)(-3) = 81 + 24 = 105$$

$$\Delta = 105 > 0$$

$$x^2+9x-4 = (x+4)(x-1) \rightarrow x = \frac{1}{2}$$

$$x = \frac{1}{2}$$

$$x = -\frac{9}{2} = -4.5$$

$$Df = \mathbb{R} - \left\{ -4.5, \frac{1}{2}, 1 \right\}$$

$$ب) y = \frac{x+3}{2x^2+9x^2+10x+3}$$

$$x+3$$

$$(2x^2+9x+3)(x+1)$$

$$Df = \mathbb{R} - \left\{ -3, -1, -\frac{1}{2} \right\}$$

$$2x^2+9x+3=0 \rightarrow x^2+4.5x+1.5=0$$

$$(x+1)(x+4.5) \rightarrow x = -\frac{1}{2}, -3 \sim x = -1$$

سوال 2

$$y = \frac{x+3}{x^2-2x^2+2x-1} = \frac{x+3}{(x^2-x+1)(x-1)}$$

$$\Delta = 1 - 4 = -3$$

$$\Delta < 0$$

$$Df = \mathbb{R} - \{1\}$$

$$y = \sqrt{\frac{x+3}{x^2-2x^2+2x-1}} \geq 0 \rightarrow \sqrt{\frac{x+3}{(x^2-x+1)(x-1)}}$$

ب)

$$\frac{-3}{+1-1} + \frac{1}{+1-1} \rightarrow Df = (-\infty, -3] \cup (1, +\infty)$$

2

سوال 3

$$x^2 - \omega(x-1) - 2x + \omega \neq 0$$

$$(1-x) \quad (x-1)$$

$$Df = \mathbb{R} - \{-3, 0, \omega\}$$

$$\rightarrow 1) x^2 - \omega x - 2x + \omega = 0$$

$$(x-1)(x-\omega) \rightarrow \omega$$

$$Df = \mathbb{R} - \{2, \omega\}$$

$$\rightarrow 2) x^2 - \omega + \omega x - 2x + \omega = x(x+3)$$

$$x^2+3x$$

$$Df = \mathbb{R} - \{-3, 0\}$$

TOPCO

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(K) Class

$$\text{الف) } y = \sqrt{[-n] - r} \geq 0 \rightarrow [-n] \geq +r \quad Df = (-\infty, r]$$

$$\text{ب) } y = \frac{\omega n^2 + 4}{[n]^r - r[n] - r} \neq 0$$

$$t = [n]$$

$$t^r - r t - r = 0$$

$$a + b = c \rightsquigarrow t = -1$$

$$\rightsquigarrow t = -\frac{c}{a} = 1$$

$$Df = \mathbb{R} - ([r, r) \cup [-1, 0])$$

(Q) Class

ج))

$$[n - \frac{1}{r}] + [n + \frac{r}{r}] \geq 0 \rightsquigarrow [n + \frac{r}{r}] - 1 + [n + \frac{r}{r}] \geq 0$$

$$r[n + \frac{r}{r}] \geq 1 \rightsquigarrow [n + \frac{r}{r}] \geq \frac{1}{r}$$

$$n + \frac{r}{r} \geq \frac{1}{r} \rightsquigarrow n \geq \frac{1}{r} \quad Df = [\frac{1}{r}, +\infty)$$

$$\text{د) } \underbrace{[n - \frac{1}{r}]}_a + [- (n - \frac{1}{r})] \quad \begin{cases} a \in \mathbb{Z} \rightarrow 0 \\ a \notin \mathbb{Z} \rightarrow -1 \end{cases}$$

$$n - \frac{1}{r} \in \mathbb{Z}$$

$$Df = \{n \mid n = k + \frac{1}{r}, k \in \mathbb{Z}\}$$

$$n \in \mathbb{Z} + \frac{1}{r}$$



TOPCO

الف) $y = \frac{\cot m + 1}{\tan m + 1} \neq 0$

(4 سوال)

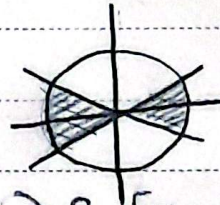
$$\left. \begin{array}{l} \sin m \neq 0 \rightarrow m \neq K\pi \\ \cos m \neq 0 \rightarrow m \neq K\pi + \frac{\pi}{2} \\ \tan m \neq -1 \rightarrow m \neq K\pi - \frac{\pi}{4} \end{array} \right\} m \neq \frac{K\pi}{4}$$

$$Df = \mathbb{R} - \left\{ K\pi, K\pi + \frac{\pi}{4}, K\pi + \frac{3\pi}{4} \right\}$$

ب) $y = \sqrt{1 - f \sin^2 m} \geq 0$

$$1 \geq f \sin^2 m$$

$$\sin^2 m \leq \frac{1}{f} \rightarrow |\sin m| \leq \frac{1}{\sqrt{f}} \quad Df = \left[K\pi - \frac{\pi}{4}, K\pi + \frac{\pi}{4} \right]$$

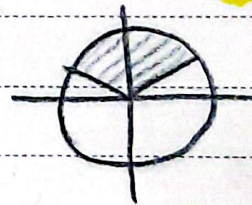


(5 سوال)

الف) $y = \sqrt{f \sin m - 1} \geq 0$

$$\sin m \geq \frac{1}{f}$$

$$Df = \left[2K\pi + \frac{\pi}{6}, 2K\pi + \frac{5\pi}{6} \right]$$

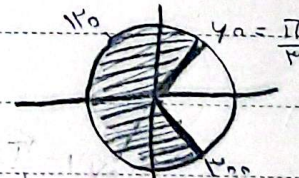


ب) $y = \sqrt{1 - f \cos m} \geq 0$

$$f \cos m \leq 1$$

$$\cos m \leq \frac{1}{f}$$

$$Df = \left[2K\pi + \frac{\pi}{3}, 2K\pi + \frac{5\pi}{3} \right]$$



(6 سوال)

الف) $-1 \leq m^2 + 3m + 1 \leq 1$

$$m^2 + 3m + 1 \geq -1$$

$$m^2 + 3m + 4 \geq 0$$

$$(m+1)(m+4) \geq 0$$

$$+ \quad - \quad - \quad +$$

$$m \geq -1 \quad \text{و} \quad m \leq -4$$

$$Df = [-4, -1] \cup [-1, 0]$$

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$$m^2 + 3m + 1 \leq 1$$

$$m^2 + 3m \leq 0$$

$$+ \quad - \quad - \quad +$$

$$m(m+3) \leq 0 \quad -3 \leq m \leq 0$$

ب) $\cos y = \sqrt{\omega - 2n} \geq 0$ ① ② $\rightarrow Df = [r, 2\omega]$

$$\begin{aligned} -1 \leq \sqrt{\omega - 2n} \leq 1 & \quad \begin{array}{l} r \leq \omega \\ n \leq r/\omega \end{array} \quad \text{②} \\ \omega - 2n \leq 1 & \\ r \leq 2n \sim n \geq r/2 \sim [r/2, +\infty) \text{ ①} \end{aligned}$$

(9 سوال)

الف) $y = \log_r$ $(1 - \log_r \frac{1}{r})$
 $1 - \log_r \frac{1}{r} > 0 \quad n > 0$

$$\log_r \frac{1}{r} < 1 \sim n < r$$

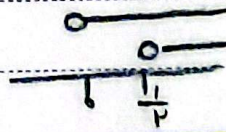
$$Df = (0, r)$$

ب) $y = \log_r$ $(1 - \log_r \frac{1}{r})$

$$\log_r \frac{1}{r} > 0 \quad n > 0 \text{ ①}$$

$$\log_r \frac{1}{r} < 1 \sim n > \frac{1}{r} \text{ ②}$$

$$\text{①} \cap \text{②} \rightarrow Df = (\frac{1}{r}, +\infty)$$



(10 سوال)

الف) $r^{fn-mr} - 1 \geq 0$

$$r^{fn-mr} \geq 1$$

$$-\frac{1}{r} + \frac{r}{r} =$$

$$Df = [0, r]$$

$$\log r^{fn-mr} \geq \log r$$

$$fn - mr \geq r$$

$$-(mr - fn + r) \geq 0$$

$$-(n-1)(n-r) \geq 0$$

ب) $\frac{rn + \omega}{rn + r} \in W$

$$\frac{\omega}{rn + r}$$

$$n = -\frac{rn + \omega}{rn + r}$$

$$Df = \{n \mid n \in -\frac{rn + \omega}{rn + r}, n \in W\}$$